

PROCEEDINGS
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NEW RODENTS (MAMMALIA: CRICETIDAE,
MURIDAE) FROM IRAN AND PAKISTAN

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From 1962 until 1967, collections of mammals were retained as voucher specimens as part of studies on ectoparasites and scrub typhus conducted in Pakistan and Iran. Subsequent examination of these collections of mammals reveals the existence of six undescribed subspecies of rodents which are proposed and described in this paper.

MATERIALS AND METHODS

All cranial measurements were taken with dial calipers and are in millimeters, weights are in grams and capitalized color terms are from Ridgway "Color Standards and Color Nomenclature" 1912. External measurements are those of the field collector. Hind foot measurements include the claw. Total length and length of tail were taken on the dorsal surface of specimens; the latter measurement with tail held perpendicular to the body.

All specimens are deposited in the National Museum of Natural History (USNM), Smithsonian Institution. Museum catalog numbers listed in the measurements refer to this collection.

***Calomyscus bailwardi grandis*, new subspecies**

Holotype: Adult female, skin and skull, USNM 369548, from 11 km ENE Fasham, Teheran Prov., Iran; obtained 28 June 1965, by Robert G. Tuck, Jr., original no. 1704.

Specimens examined: Twenty-six, as follows: Iran, Teheran Prov., 11 km ENE Fasham, 7; south slopes of Mount Demavend, 8500 ft., 19.

Measurements: Selected external and cranial measurements of the holotype followed by means and extremes of five adult females (341096-097, 341106-107, 341110) and six adult males (341099, 341101,

341103-105, 341112) from the south slopes of Mount Demavend, Iran, are: Total length, 187, 176.8 (173-181), 180.2 (177-183); length of tail, 92, 94.8 (90-99), 96.3 (96-97); length of hind foot, 20, 20.8 (20-21), 21.0 (20-22); length of ear, 21, 19.6 (19-20), 19.8 (19-20); occipitonasal length, 26.8, 26.6 (26.1-27.1), 26.7 (26.4-26.8); zygomatic breadth, 12.7, 12.9 (12.6-13.1), 12.9 (12.7-13.0); breadth of braincase, 12.1, 12.2 (11.9-12.4), 12.1 (11.9-12.5); least interorbital constriction, 3.9, 4.1 (3.9-4.3), 4.0 (3.9-4.1); length of nasals, 10.4, 10.1 (9.8-10.5), 10.0 (9.9-10.2); length of auditory bulla, 4.1, 4.2 (4.0-4.3), 4.4 (4.2-4.5); crown length of maxillary toothrow, 3.4, 3.3 (3.3-3.4), 3.4 (3.3-3.5); palatal length, 13.0, 12.8 (12.6-13.2), 12.6 (12.4-13.0); and length of anterior palatine foramina, 5.1, 5.3 (5.1-5.5), 5.2 (5.0-5.3).

Diagnosis: Entire upper parts Buffy Brown with an admixture of black-tipped hairs, all hairs plumbeous at base; fur soft. Hairs of belly, hands, feet, throat, circumoral region and venter of tail white to bases. Narrow (2 mm) band of Cinnamon Buff hairs dividing dorsal and ventral color of pelage. Dorsal hairs of tail matching hairs of dorsal pelage; tail tufted distally. Pinnae sparsely haired, distal external and two-thirds of internal portion of pinnae Deep Mouse Gray. Eye ring absent. Vibrissae nearly equally divided between black dorsal and white ventral hairs. Skull long and broad; rostrum long and relatively narrow; maxillary toothrow narrow and relatively short; length of palate long.

Comparisons: *Calomyscus bailwardi grandis* differs from *C. b. elburzensis* Goodwin, 1939, from northeastern Iran by having grayish pelage and larger overall external size, especially total length. The skulls can be separated by the larger size of *C. b. grandis*. In addition, the new subspecies has longer nasals, relatively shorter toothrow, longer palatal length and longer anterior palatine foramina than *C. b. elburzensis*.

Specimens of *C. b. mystax* Kashkarov, 1925, have not been examined but judging from published reports, this subspecies is near to *C. b. elburzensis*. *C. b. grandis* appears to be larger both externally and cranially and gray rather than pinkish brown in pelage color. The length of the maxillary toothrow of *C. b. mystax* would be relatively longer than those of the new subspecies.

From representatives of the nominate subspecies from southwestern Iran, *C. b. grandis* can be distinguished by its larger size and gray pelage with only a slight trace of the pinkish color characteristic of *C. b. bailwardi* Thomas, 1905. The long tail and hind feet of *C. b. grandis* separate these two subspecies. Cranially, the long, narrow skull of the new subspecies is larger in nearly all measurements taken than the nominate subspecies. The long and relatively narrow rostrum of *C. b. grandis* separates it at once from the short, broad rostrum of *C. b. bailwardi*.

Examples of *C. b. hotsoni* Thomas, 1920, are small for the species, both externally and cranially, and are easily separable from *C. b. grandis* by

their smaller size. In addition, the black-tipped, pale, yellow-brown pelage of *C. b. hotsoni* contrasts markedly with the gray pelage of *C. b. grandis*.

Other named subspecies of *Calomyscus bailwardi* are geographically far removed from *C. b. grandis* and need not be compared.

Remarks: Specimens of *Calomyscus bailwardi grandis* were taken in snap traps set on a rocky hillside and along the rock wall of a garden at the Fasham locality. On Mt. Demavend, individuals were caught in snap traps placed on vegetated rocky outcroppings along crests of hills radiating from the flanks of the main mountain. As with other subspecies of *Calomyscus bailwardi*, this subspecies prefers rocky habitats.

Etymology: The name *grandis* refers to the large size of this new subspecies.

***Alticola roylei parvidens*, new subspecies**

Holotype: Adult male, skin and skull, USNM 413551, from 20.5 mi N Dir, 10,400 ft., Dir State, West Pakistan; obtained 28 September 1966, by Carlton J. Philipps, original no. 744.

Specimens examined: Twenty-six, as follows: West Pakistan: Swat State, Utror, 7600 ft., 1; 6 mi SW Utror, 7; 3 mi S Kalam, 1. Dir State, 20.5 mi N Dir, 10,400 ft., 7; 20 mi N Dir, 10,200 ft., 5; 16 mi N Dir, 5.

Measurements: Selected external and cranial measurements of the holotype followed by means and extremes of two adult males (413541, 413548) from 16 mi N Dir, two adult males (413546, 413548) from 20 mi N Dir and one adult male (413562) from 6 mi SW Utror and in turn followed by measurements of a young adult female (413553) from 20.5 mi N Dir, all from Pakistan, are: Total length, 167, 163.2 (159–169), 154; length of tail, 55, 50.8 (49–54) 50; length of hind foot, 23, 21.6 (20–23), 20; length of ear, 18, 18.4 (17–20), 17; occipitonasal length, 27.8, 27.6 (27.1–28.0), 26.7; condyloincisive length, 26.7, 26.8 (26.5–27.4), 25.9; zygomatic breadth, 14.8, 14.7 (14.4–15.3), 14.1; least interorbital breadth, 3.8, 3.8 (3.6–4.0), 3.8; postzygomatic breadth, 11.9, 11.6 (11.5–11.7), 11.7; length of nasals, 8.5, 8.1 (7.9–8.5), 8.0; oblique length of auditory bulla, 8.0, 7.9 (7.8–8.0), 7.2; crown length of maxillary toothrow, 5.9, 5.8 (5.7–6.0), 5.4; length of anterior palatine foramina, 5.4, 5.4 (5.3–5.6), 5.5; and length of palate, 13.8, 14.1 (13.7–14.5), 13.5.

Diagnosis: Entire upper parts Hair Brown with red-brown cast, bases of all hairs Slate Color; fur soft. Hairs of belly and throat tipped with Ochraceous-Buff, bases of all hairs Slate. Hairs of hands and feet white to bases. Tail bicolored; dorsally same color as dorsum of body and ventrally, hairs of mixed white and Ochraceous-Buff. Pinnae well haired, externally same color as dorsum of body; internal outer edge covered with hairs of same color as external surface. Eye ring absent.

Vibrissae nearly equally divided between black dorsal and white ventral hairs. Skull relatively short and rugged; bullae relatively large, well inflated; rostrum relatively short and broad; maxillary tooththrow relatively short, posterior loop of M^3 small resulting in a narrow and short M^3 .

Comparisons: From specimens of *Alticola roylei blanfordi* Scully, 1880, from northern Pakistan and northwestern Baltistan, *Alticola roylei parvidens* can be distinguished externally by buffy-tipped ventral pelage, darker more reddish-brown dorsal pelage and more bicolored tail. Cranially, this new subspecies has a shorter, more rugged skull and shorter tooththrow than *A. r. blanfordi*. The posterior loop of M^3 is small thus giving *A. r. parvidens* a narrow and short third upper molar.

Alticola roylei parvidens can be separated from *A. r. glacialis* Miller, 1913, from central Baltistan by the darker, reddish-brown dorsal and buffy ventral color and bicolored tail of the former. Cranially, *A. r. parvidens* has larger, more inflated bullae than *A. r. glacialis*. The well-haired, white tail of *A. r. glacialis* will separate the two subspecies immediately.

From the holotype of *A. r. albicauda* (True, 1894) from the Braldu Valley, Baltistan, *A. r. parvidens* differs by being darker, more reddish brown rather than pale brown, having a moderately haired bicolored long tail rather than a white, well-haired short tail.

The holotype and type-series of *Alticola roylei acmaeus* Schwarz, 1939, from near Leh, Kashmir, differs from *A. r. parvidens* by having a short, white, well-haired tail; long, thick grayish dorsal pelage; and white-tipped ventral fur. The skull of *A. r. acmaeus* is smaller with small, relatively uninflated bullae.

Alticola roylei parvidens can be distinguished externally from *A. r. montosa* (True, 1894) from northeastern Pakistan and western Kashmir by a slightly more blackish cast to the reddish-brown dorsal fur, the buffy tips of the ventral pelage, and less marked bicolored tail. Cranially, *A. r. parvidens* has a shorter, broader rostrum; more parallel-sided mesopterygoid fossa; and larger, more inflated auditory bullae than *A. r. montosa*.

Remarks: Ellerman (1947:276) reported *Alticola roylei montosa* from Safed Koh, North West Frontier; this locality is near Parachinar according to Siddiqi (1961:223). Judging from the distribution of *A. r. montosa* in Pakistan, this population is doubtfully referable to this subspecies but might possibly be *A. r. parvidens*. The Safed Koh Mountains are an extension into Pakistan of mountains in Afghanistan and the *Alticola roylei* there are undoubtedly related to those found in Afghanistan. Whether the Safed Koh and the Afghanistan populations are *A. r. parvidens* or some other subspecies, perhaps undescribed, remains to be ascertained.

Alticola roylei parvidens were trapped among rocks in conifer forests.

Etymology: The name *parvidens* refers to the small teeth of this taxon.

***Gerbillus cheesmani aquilus*, new subspecies**

Holotype: Adult male, skin and skull, USNM 354623, from 60 km W Kerman, Kerman Province, Iran; obtained 8 December 1964, by Robert G. Tuck, Jr., original no. 1222.

Specimens examined: Forty-two, as follows: Iran: Kerman Prov., 60 km W Kerman, 9; 10 km N Mahan, 22 km SE Kerman, 2; 60 km SW Iranshahr, 19; 50 km W Iranshahr, 8; 30 km SW Iranshahr, 4.

Measurements: Averages and extremes of selected external and cranial measurements of 11 (extreme followed by sample size if less than 11) adult males from 60 km W Kerman (354621, 354623, 354626-628), 22 km SE Kerman (329073), 50 km W Iranshahr (328043-044, 328047), 60 km SW Iranshahr (354614) and 30 km SW Iranshahr (354620), with the measurements of the holotype in brackets followed by nine (extreme followed by sample size if less than nine) adult females from 60 km SW Iranshahr (354609-613, 354615-618), Iran, are, respectively: Total length, 238.0 (227-254) [227] 224.8 (216-231); length of tail, 135.3 (124-151) [124] 131.9 (122-137); length of hind foot, 30.8 (30-32) [30] 29.6 (28-30); length of ear, 14.9 (14-17) [14] 13.4 (13-14); occipitonasal length, 30.8 (30.1-31.8) 9 [31.3] 28.7 (28.0-29.2) 8; zygomatic breadth, 16.6 (16.1-17.1) 10 [16.7] 15.5 (15.1-15.9) 8; breadth of braincase, 14.4 (13.9-14.9) [14.7] 13.8 (13.5-13.9) 7; least interorbital breadth, 5.7 (5.1-6.2) [6.2] 5.2 (5.0-5.3); length of nasals, 11.3 (10.6-12.1) 10 [11.3] 10.3 (10.0-10.8) 8; oblique length of audital portion of auditory bulla, 9.9 (9.6-10.2) 10 [10.1] 9.4 (9.2-9.6) 8; crown length of maxillary toothrow, 3.7 (3.4-4.0) [3.7] 3.5 (3.3-3.7); greatest crown breadth of M^3 - M^3 , 4.8 (4.4-5.0) [4.8] 4.6 (4.4-4.8); length of anterior palatine foramina, 4.5 (4.3-4.8) [4.7] 4.2 (4.1-4.3); length of posterior palatine foramina, 2.1 (1.9-2.5) [1.9] 2.1 (1.9-2.2); and height of skull, 12.6 (12.2-12.9) 9 [12.9] 11.9 (11.7-12.1) 5.

Diagnosis: Upper parts near Cinnamon with admixture of black-tipped hairs, becoming interspersed with white hairs on sides and pectoral areas. Postorbital areas, postauricular areas, circumoral region, entire under parts, and ventral and dorsal hairs of hands and feet white. Pinnae Cinnamon-Buff, finely covered with buffy hairs on anterior margin, margin of pinnae black. Tail indistinctly bicolored Pinkish Buff ventrally and Light Pinkish Cinnamon dorsally terminating in a distinct dorsal pencil of Mouse Gray hairs. Vibrissae long, dorsal hairs black and ventral white. Skull large in size and robust; auditory bullae inflated; zygomata heavy; basioccipital constricted anteriorly and forming distinct foramina near medial margins of auditory bullae; mastoidal portion of bullae inflated, projecting well beyond occiput; rostrum broad.

Comparisons: From specimens of *Gerbillus cheesmani cheesmani* Thomas, 1919, from 10 mi S and 14 mi S of Kuwait, Kuwait, *Gerbillus cheesmani aquilus* differs in having more inflated auditory bullae, more anteriorly constricted basioccipitals, larger foramina between the basioc-

cipitonasal and the auditory bullae, narrower pterygoid hamulae, greater occipitonasal length, greater zygomatic breadth, greater breadth of braincase, greater interorbital breadth, greater total length and greater length of tail. The nominate subspecies is more golden in color and lacks the dusky color of the dorsum of *G. c. aquilus*. The tail of *G. c. aquilus* possesses a relatively well-developed dark pencil compared to the slightly developed one on *G. c. cheesmani*.

For comparison with *Gerbillus cheesmani subsolanus*, see the following account.

Remarks: There is a broad hiatus in the distribution of this gerbil in Iran from the locality 19 km S Shush reported by Lay (1967:173) and the one 60 km W Kerman reported here. Numerous localities were visited in the intervening area during 2 different years but only *Gerbillus nanus* was trapped in that area. The geographic relationship between the plateau populations of central and eastern Iran and the plains populations of southwestern Iran and southern Iraq is unclear. Perhaps this species occurs in suitable sandy habitats along the Persian Gulf.

Etymology: The name *aquilus* refers to the swarthy, dusky color of the dorsal pelage of this new subspecies.

***Gerbillus cheesmani subsolanus*, new subspecies**

Holotype: Adult female, skin and skull, USNM 369335, from 56 km E Nok Kundi, Kalat Division, Pakistan; obtained 3 February 1965, by Robert G. Tuck, Jr., original no. 1283.

Specimens examined: Forty-four, as follows: Iran: Kerman Prov., 85 km N Zahedan, 13. Pakistan: Kalat Division, 56 km E Nok Kundi, 24; 10 km E Dalbandin, 4; 25 km SW Noshki, 3.

Measurements: Averages and extremes of selected external and cranial measurements of nine (extreme followed by sample size if less than nine) adult males from 56 km E Nok Kundi (369317, 369319, 369330, 369333, 369336-338) and 10 km E Dalbandin (369340, 369342), with the measurements of the type in brackets followed by seven (extreme followed by sample size if less than seven) adult females from 56 km E Nok Kundi (369318, 369320-321, 369325, 369335) and 10 km E Dalbandin (369339, 369341), Pakistan, are, respectively: Total length, 236.6 (223-248) [242] 224.9 (213-242); length of tail, 135.9 (128-143) [136] 127.1 (122-136); length of hind foot, 29.3 (26-31) [31] 28.7 (28-31); length of ear, 14.3 (13-16) [15] 14.3 (13-15); occipitonasal length, 29.8 (28.7-30.9) 8 [30.8] 29.3 (27.1-30.8); zygomatic breadth, 16.1 (15.5-16.9) 8 [16.2] 15.9 (15.2-16.4); breadth of braincase, 14.4 (13.7-14.8) [14.3] 14.2 (13.8-14.3); least interorbital breadth, 5.6 (5.3-6.0) [6.0] 5.7 (5.5-6.0); length of nasals, 10.8 (10.1-11.6) [11.9] 10.7 (9.5-11.9); oblique length of audital portion of auditory bulla, 10.1 (9.8-10.5) [10.0] 9.9 (9.6-10.3); crown length of maxillary toothrows, 3.7 (3.6-3.8) [3.7] 3.6 (3.5-3.8);

greatest crown breadth of M^3-M^3 , 4.7 (4.4–5.0) [4.3] 4.7 (4.3–5.2); length of anterior palatine foramina, 4.3 (4.0–4.6) [4.0] 4.2 (3.7–4.6); length of posterior palatine foramina, 2.1 (1.5–2.5) [2.5] 2.2 (1.9–2.5); and height of skull, 12.3 (12.1–12.6) [12.5] 12.2 (11.8–12.7) 6.

Diagnosis: Upper parts near Pinkish Cinnamon with admixture of black-tipped hairs, becoming interspersed with white hairs on sides. Postorbital and postauricular areas, circumoral region, entire under parts and ventral and dorsal hairs of hands and feet white. Pinnae Cinnamon-Buff, finely covered with white and buffy hairs along anterior margin; margin of pinnae black. Tail indistinctly bicolored, Pale Pinkish Buff ventrally, and Pinkish-Buff dorsally terminating in a distinct dorsal pencil of Mouse Gray hairs. Vibrissae long, dorsal hairs black and ventral white. Skull moderately large in size and robust; auditory bullae inflated; zygomata moderately heavy; mastoidal portion of bullae weakly inflated for species, barely projecting beyond occiput; rostrum narrow; nasals narrow; anterior palatine foramina short and narrow, pointed anteriorly.

Comparison: From specimens of *Gerbillus cheesmani cheesmani* Thomas, 1919, from 10 mi S and 14 mi S Kuwait, Kuwait, *Gerbillus cheesmani subsolanus* can be distinguished by having more inflated auditory bullae, narrower pterygoid hamulae, greater breadth of braincase, greater interorbital breadth, greater total length and greater length of tail. In color, *Gerbillus cheesmani subsolanus* is darker and lacks the pure golden color characteristic of the nominate subspecies. The dark, penicillate tip of the tail in *G. c. subsolanus* is lacking in *G. c. cheesmani*.

Gerbillus cheesmani subsolanus differs from *Gerbillus gleadowi* Murray, 1886, as known from specimens 3 mi W Dera Ghazi Khan, Pakistan, by having a greater occipitonasal length, greater zygomatic breadth, greater breadth of braincase, shorter oblique length of audital portion of auditory bulla, greater ventral and dorsal inflation of the audital portion of the auditory bullae, and greater length of head and body. In color, *G. c. subsolanus* and *G. gleadowi* are similar. Both have a suffusion of black in the color of the dorsal hairs, a distinctly penicillate tail and white underparts. From above *G. gleadowi* appears slightly more streaked due to the concentration of black towards the center of the dorsum. In addition, *G. gleadowi* differs from *G. c. subsolanus* by having a distinctly bicolored tail, the color of the dorsum nearly matching the color of the dorsal hairs of the body but the venter is paler being nearly white in some individuals.

Gerbillus cheesmani subsolanus differs from *Gerbillus cheesmani aquilus* in having less inflated auditory bullae, less anteriorly constricted basioccipitals, smaller foramina between the basioccipital and the auditory bullae, broader pterygoid hamulae, slightly shorter nasals, narrower and posteriorly less rounded anterior palatine foramina, and less inflated mastoidal bullae. In color, *G. c. aquilus* is darker, more dusky dorsally, than is *G. c. subsolanus*; the dorsal color of the tail and its tip is darker in *G. c. aquilus* than in *G. c. subsolanus*.

Remarks: The specimens from 85 km N Zahedan, Iran, are paler in color than are the specimens of this subspecies from Pakistan and show less suffusion of black dorsally. However, the skulls are indistinguishable from those of specimens from Pakistan.

Even though numerous localities were visited in the south of the Baluchistan portion of Pakistan, only *Gerbillus nanus* was taken there.

Etymology: The name *subsolanus* refers to the eastern position of this subspecies in the geographic range of *Gerbillus cheesmani*.

***Meriones erythrourus farsi*, new subspecies**

Holotype: Adult male, skin and skull, USNM 329186, from 3 km N Bariz, 50 km N Lar, Fars Province, Iran; obtained 27 March 1963, by Gary L. Ranck, original number 3911.

Specimens examined: One hundred forty-four, as follows: Iran: Fars Prov., 13 km SE Shiraz, 1; 71 km SE Shiraz, 2; 8 km W Estahbanat, 1; 11 km NW Darab, 9; 41 km S Fasa, 29; 32 km SE Jahrom, 6; 19 km S Mansorabad, 56; 3 km N Bariz, 50 km N Lar, 4; 4 km N Lar, 36.

Measurements: Selected external and cranial measurements of the holotype followed by an adult male (USNM 329187) and an adult female (USNM 329184) from the type-locality are: Total length, 289, 284, 278; length of tail, 140, 150, 140; length of hind foot, 35, 35, 32; length of ear, 19, 18, 16; occipitonasal length, 43.0, 40.3, 39.0; condyloincisive length, 39.2, 37.0, 36.1; zygomatic breadth, 23.0, 21.5, 21.3; breadth of braincase, 19.2, 19.7, 18.3; least interorbital breadth, 6.7, 6.8, 6.4; length of nasals, 16.6, 14.8, 15.4; oblique length of audital portion of auditory bulla, 15.0, 14.5, 14.8; crown length of maxillary toothrow, 5.0, 4.7, 4.7; length of anterior palatine foramina, 7.5, 7.1, 7.0; and length of posterior palatine foramina, 2.4, 1.6, 2.2.

Diagnosis: Upper parts of body pale for the species, between Light Ochraceous-Buff and Cinnamon-Buff with tips of hairs black, proximal two-thirds of hairs plumbeous; sides becoming paler with gradual transition to white on belly and throat. Postauricular areas and circumoral region white. Dorsal hairs of hind and forefeet Pinkish Buff. Hairs of external pinnae Light Ochraceous-Buff; hairs of internal surface near Pale Pinkish Buff. Tail not bicolored, Cinnamon-Buff in color with penicillate tip of mixed long white and black hairs. Vibrissae long, dorsal hairs black and ventral white. Small Cinnamon-Buff patch on each side of nose. Skull large in size and robust; zygomata heavy; auditory bullae well inflated; nasals relatively long; maxillary toothrow relatively long.

Comparisons: From specimens of *Meriones erythrourus caucasicus* Brandt, 1855, from 27 km N Abadeh and 150 km N (by road) Isfahan, Iran, *Meriones erythrourus farsi* can be distinguished by its paler dorsal color, especially lacking in reddish tinge, paler tail, less development of a black pencil on the tail, large skull, heavy zygomata, large teeth and long toothrow.

Meriones erythrourus farsi differs from *M. e. irani* Goodwin, 1939, as known from numerous localities in northeastern and eastern Iran by having paler dorsal fur with less reddish color and suffusion of black in the hairs, paler colored tail, and less development of a black pencil. Cranially the two subspecies are similar, both having large skulls with large teeth and heavy zygomata.

The two subspecies compared above are the only ones bordering on the range of *Meriones erythrourus farsi*. *Meriones erythrourus syrius* Thomas, 1919, occurs in Iraq but is separated geographically from *M. e. farsi* by *M. e. caucasicus*.

Remarks: With the present nomenclatural confusion in northeastern Africa concerning *Meriones libycus* Lichtenstein, 1823, and *Meriones shawi* (Duvernoy and Lereboullet, 1842) (Setzer, 1961:88, Ranck, 1968:161, 183), we choose to retain the oldest name available for the Asian population [*M. erythrourus* (Gray, 1842)] at this time, pending a more detailed study of North African *Meriones* and a revision of the genus.

Both Heptner (1940) and Ellerman (1948) reported the occurrence of *Meriones erythrourus* from Khuzistan province, Iran. These specimens have not been examined but probably represent either *M. e. caucasicus* or *M. e. syrius*.

Of the 144 specimens of this subspecies examined, only 10 specimens were classed as adults and used in the description. Most of the individuals taken were subadults. Thus comparisons were made between comparable aged samples of subadults and young adults of each subspecies as well.

Etymology: The subspecies name *farsi* refers to the province of that name in Iran from which the specimens were obtained.

***Nesokia indica chitralensis*, new subspecies**

Holotype: Adult male, skin and skull, USNM 354362, from 4 mi N Chitral, approx. 4800 feet, Chitral State, Pakistan; obtained 18 August 1964; by Ronald H. Pine, original no. 2496.

Specimens examined: Ten, as follows: Pakistan: Chitral State, 4 mi N Chitral, ca. 4800 ft., 6; 10 mi N Chitral, ca. 5100 ft., 1. Dir State, Dir, 4400 ft., 3.

Measurements: Selected external and cranial measurements of the holotype followed by those of an adult female (354368) from 10 mi N Chitral and an adult female (413713) from Dir, Pakistan, respectively, are: Total length, 316, 295, 295; length of tail, 117, 108, 110; length of hind foot, 42, 38, 34; length of ear from notch, 21, 21, 22; occipitonasal length, 44.8, 42.5, 42.1; condylobasal length, 46.2, 43.9, 43.5; zygomatic breadth, 29.0, 27.8, 28.2; breadth of braincase, 18.6, 18.2, 17.7; least interorbital breadth, 6.5, 6.3, 5.7; length of nasals, 15.9, 14.5, 13.6; oblique length of auditory bulla, 7.6, 6.9, 7.7; crown length of maxillary toothrow, 7.7, 7.4, 7.0; and length of anterior palatine foramina, 5.3, 4.9, 5.2.

Diagnosis: Entire upper parts brindled, between Hair Brown and Cinnamon-Drab with reddish-brown cast near midline of back and head; fur coarse and stiff. Dorsal pelage of hands and feet Mummy Brown with white hairs on phalanges. Tail unicolored, black. Belly near Hair Brown but lacking reddish-brown cast; white spot, of varying size, on chest. Pinnæ sparsely haired; hairs varying from brownish to white on external surface and white hairs present on internal surface. Skin of pinnæ near Blackish-Brown (2). Vibrissae divided nearly equally between black dorsal and white ventral hairs. Skull large with broad braincase; nasals long; auditory bullae relatively as well as actually small and uninflated.

Comparisons: From representatives of the nominate subspecies, *Nesokia indica chitralensis* can be distinguished by its much larger skull, small and uninflated auditory bullae, and long nasals. Skins of *N. i. chitralensis* are darker with more suffusion of black than are those of *N. i. indica* (Gray, 1830). The skins also lack the reddish-brown tint and soft pelage characteristic of the nominate subspecies.

The new subspecies differs from *N. i. huttoni* (Blyth, 1846) by having dark, coarse pelage with black-tipped guard hairs as opposed to the pale brown, soft pelage with pale tipped guard hairs of *huttoni*. The skulls can be separated by the small and uninflated auditory bulla, shorter maxillary tooththrow, and broader, more rounded braincase of *N. i. chitralensis*.

Nesokia indica indica and *N. i. huttoni* are the only currently recognized subspecies near *N. i. chitralensis* that need comparison. Judging from published measurements, the Russian subspecies, *N. i. satunini* Nehring, 1899, and *N. i. boettgeri* Radde and Walter, 1889, would differ from the new subspecies in the same manner as does *N. i. huttoni*. The status of *N. i. scullyi* Wood-Mason, 1876, and *N. i. brachyura* Büchner, 1889, both from Chinese Turkestan, is uncertain at this time. It is doubtful, however, that gene flow between these latter two subspecies and *N. i. chitralensis* would exist across the higher elevations of the Himalayas, an area in which *Nesokia* is not known, nor expected, to occur.

Remarks: *Nesokia indica chitralensis* was taken in moist habitats in agricultural areas, particularly rice fields, in the vicinities of Chitral and Dir.

The southern limits of this new subspecies are not known, but it should be expected in Afghanistan along the Kunar and Kabul rivers near the Pakistan border.

Specimens from Dir have a softer, more reddish pelage than do those from north of Chitral. However, the skulls of the Dir individuals are indistinguishable from the Chitral specimens and the texture and color of the pelage of the Dir animals is nearer to *Nesokia indica chitralensis* than to *N. i. indica* or *huttoni*.

Etymology: The subspecies name *chitralensis* refers to the name of the State in Pakistan from which the type series was taken.

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